

WHAT IS CLAIMED IS:

1. A communications device for performing data communications within a network configured by a plurality of
5 devices, the communications device comprising:

a data processing section for performing a predetermined process on data transmitted from another device connected to the communications device and generating data to be transmitted to the other device;

10 a synchronization detecting section for detecting a loss of synchronization in data communications with the other device;

a data communications controlling section for controlling data communications between the other device and the data processing section, disabling, upon detection by the
15 synchronization detecting section of the loss of synchronization, at least one of a data input from the other device to the data processing section or a data output from the data processing section to the other device, and then enabling again the disabled data input or data output; and

20 a connection processing section for performing, when the data communications controlling section again enables the data input or the data output, a connecting process for enabling data communications with the other device.

25 2. The communications device according to claim 1,

wherein

the data communication controlling section includes:

a control information retaining section for retaining information indicative of whether a data input from the other device to the data processing section is disabled or enabled and, upon detection by the synchronization detecting section of the loss of synchronization, changing the information so as to indicate that the data input is disabled for a predetermined time period; and

a switching section for logically cutting off a data transmission path from the other device to the data processing section when the information retained by the control information retaining section indicates that the data input is disabled, and causing the transmission path to a connection state when the information indicates that the data input is enabled.

3. The communications device according to claim 2, wherein

the control information retaining section retains information indicative of a logic of "0" as information indicating that the data input is disabled, and information indicative of a logic of "1" as information indicating that the data input is enabled, and

the switching section includes an AND gate supplied with the information held by the control information retaining section

and a signal received from the other device.

4. The communications device according to claim 1,
wherein

5 the data communication controlling section includes:

a control information retaining section for
retaining information indicative of whether a data output from
the data processing section to the other device is disabled or
enabled and, upon detection by the synchronization detecting
10 section of the loss of synchronization, changing the information
so as to indicate that the data output is disabled for a predetermined
time period; and

a switching section for logically cutting off a data
transmission path from the data processing section to the other
15 device when the information retained by the control information
retaining section indicates that the data output is disabled, and
causing the transmission path to a connection state when the
information indicates that the data output is enabled.

20 5. The communications device according to claim 4,
wherein

the control information retaining section retains
information indicative of a logic of "0" as information indicating
that the data output is disabled, and information indicative of
25 a logic of "1" as information indicating that the data output is

enabled, and

the switching section includes an AND gate supplied with the information held by the control information retaining section and a signal to be transmitted to the other device.

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6. The communications device according to claim 1, wherein

the data communications controlling section repeatedly disables and enables at least one of the data input and the data output while the synchronization detecting section detects a loss of synchronization.

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7. A communications system for data communications within a network configured by a plurality of devices, wherein one of two arbitrary devices connected to each other in the network is the communications device according to claim 1.

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8. A communications method for use in a communications device for performing data communications in a network configured by a plurality of devices, the communications device including a data processing section for performing a predetermined process on data transmitted from another device connected to the communications device and generating data to be transmitted to the other device, the communications method comprising:

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a synchronization detecting step of detecting a loss

of synchronization in data communications with the other device;

a data communications controlling step of controlling data communications between the other device and the data processing section, disabling, upon detection in the
5 synchronization detecting step of the loss of synchronization, at least one of a data input from the other device to the data processing section or a data output from the data processing section to the other device, and then enabling again the disabled data input or data output; and

10 a connection processing step of performing, when the data input or the data output is again enabled in the data communications controlling step, a connecting process for enabling data communications with the other device.